ABSTRACT

The present invention relates to novel nucleic acid molecules encoding a Rhesus D antigen contributing to the weak D phenotype which are characterized by one or a combination of missense mutations or by a gene conversion involving exons 6 to 9 of the *RHD* and *RHCE* genes. The present invention further relates to vectors comprising the nucleic acid molecules of the invention, to hosts transformed with said vectors, to proteins encoded by said nucleic acid molecules and to methods of producing such polypeptides. The fact that missense mutations and the conversion referred to above can be directly correlated to the weak D phenotype has a significant impact on the routine testing of blood samples. For example, oligonucleotides and antibodies can now be designed that generally allow the detection of weak D phenotypes in a sample. Such oligonucleotides, antibodies as well as a variety of diagnostic methods all fall within the scope of the present invention. RhD antigens encoded by the novel nucleic acid molecules may be used for the characterization, standardization and quality control of monoclonal and polyclonal anti-D antisera. Finally, the invention relates to a kit useful for testing for the presence of weak D phenotypes.